



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re PATENT APPLICATION of: Samuels

SERIAL NO.:

ART UNIT:

FILED: herewith

EXAMINER:

TITLE: METHOD AND APPARATUS FOR TRANSMITTING AND RECEIVING  
SIGNALS

ATTORNEY DOCKET NO.: 200-007752-US (D01)

Hon. Commissioner of Patents and Trademarks  
Washington, DC 20231

**PRELIMINARY AMENDMENT**

Dear Sir:

This Preliminary Amendment is herewith submitted in conjunction with the filing of a divisional patent application. The parent application is copending U.S. Patent Application S.N. 08/994,228, filed December 19, 1997.

Prior to examination of this application please amend the application as shown below.

**IN THE SPECIFICATION:**

Page 1 following the Title in line 1, please insert the following:

This application is a division of pending US Application Serial No.: 08/994,228, filed December 19, 1997.

IN THE CLAIMS:

Please cancel claims 1-25 without prejudice.

Please add the following claims:

26. (New) A dual-mode receiver operable to receive signals in a first mode having an associated first channel spacing, and to receive signals in a second mode having an associated second channel spacing smaller than the first channel spacing, comprising:

first and second front-end RF stages for receiving a signal transmitted in the first mode and the second mode, respectively, and supplying a further signal to RF circuitry operable at an intermediate frequency (IF) common to each mode of operation.

27. (New) A receiver as claimed in claim 26, comprising two frequency down-conversion stages.

28. (New) A receiver as claimed in claim 27, wherein a synthesizer associated with one frequency down-conversion stage has a frequency resolution equal to the channel spacing associated with the received signal.

29. (New) A receiver as claimed in claim 28, wherein a synthesizer associated with another frequency down-conversion stage has a

frequency resolution wider than the channel spacing associated with the received signal.

30. (New) A receiver as claimed in claim 26, operable to convert signals received in the first mode and the second mode directly to a common intermediate frequency.

31. (New) A receiver as claimed in claim 26, further comprising:

a first antenna for receiving a first signal in the first mode;

a filter associated with the first antenna for selecting signals lying in a predetermined first frequency band;

a first mixer for mixing the received first signal with a first local oscillator signal;

a second antenna for receiving a second signal in the second mode;

a filter associated with the second antenna for selecting signals lying in a predetermined second frequency band;

a second mixer for mixing the received second signal with a second local oscillator signal;

a switch for selecting between signals received in the first mode and the second mode having as an output, the output of the first mixer or the second mixer; and

a third mixer for mixing the output of the switch with a third local oscillator signal to produce a signal suitable for base band processing.

32. (New) A receiver as claimed in claim 31, wherein the second local oscillator signal is produced by a first synthesizer.

33. (New) A receiver as claimed in claim 31, wherein the third local oscillator signal is produced by a second synthesizer.

34. (New) A receiver as claimed in claim 31, wherein the first local oscillator signal is produced by a combined output of the first and the second synthesizers.

35. (New) A receiver as claimed in claim 26, operable to convert the frequency of a signal received in one of said modes to a frequency associated with the other of said modes.

36. (New) A receiver as claimed in claim 26, further comprising:

a first antenna for receiving a first signal in the first mode;

a second antenna for receiving a second signal in the second mode;

a filter associated with the second antenna for selecting signals lying in a predetermined second frequency band;

a first mixer for mixing the received second signal with a first local oscillator signal;

a switch for selecting between signals received in the first mode and the second mode, and having as an output, the output of the first mixer or the output of the first antenna;

a filter for selecting signals from the output of the switch lying in a first predetermined frequency band;

a second mixer for mixing the filtered output of the switch with a second local oscillator signal; and

a third mixer for mixing the output of the second mixer with a third local oscillator signal to produce a signal suitable for base band processing.

37. (New) A receiver as claimed in claim 36, wherein the first local oscillator signal is produced by a first synthesizer.

38. (New) A receiver as claimed in claim 36, wherein the third local oscillator signal is produced by second synthesizer.

39. (New) A receiver as claimed in claim 36, wherein the second local oscillator signal is produced by a combined output of the first and the second synthesizers.

40. (New) A dual-mode transmitter operable to transmit signals in a first mode having an associated first channel spacing, and to transmit signals in a second mode having an associated second channel spacing smaller than the first channel spacing, comprising:

first and second terminal RF stages for transmitting a signal in the first and the second mode respectively, the terminal RF stages being supplied by a signal from RF circuitry operable at an intermediate frequency (IF) common to each mode of operation.

41. (New) A transmitter as claimed in claim 40, further comprising two frequency up-conversion stages.

42. (New) A transmitter as claimed in claim 41, wherein a synthesizer associated with one frequency up-conversion stage has a frequency resolution equal to the channel spacing associated with the transmitted signal.

43. (New) A transmitter as claimed in claim 42, wherein a synthesizer associated with another frequency up-conversion stage has a frequency resolution wider than the channel spacing associated with the transmitted signal.

44. (New) A transmitter as claimed in claim 40, further comprising:

a first mixer for mixing a modulated signal with a first local oscillator signal;

a switch for selecting between transmission in the first and the second modes and having the output of the first mixer as an input;

a second mixer for mixing the output of the switch with a second local oscillator signal when transmission in the first mode is selected;

a filter associated with the output of the second mixer for selecting signals lying in a predetermined first frequency band;

a first antenna for transmitting signals in the first mode;

a third mixer for mixing the output of the switch with a third local oscillator signal when transmission in the second mode is selected;

a filter associated with the output of the third mixer for selecting signals lying in a predetermined second frequency band; and

a second antenna for transmitting signals in the second mode.

45. (New) A transmitter as claimed in claim 44, further comprising a first synthesizer, and wherein the first local oscillator signal is produced by the first synthesizer.

46. (New) A transmitter as claimed in claim 44, further comprising a second synthesizer, and wherein the third local oscillator signal is produced by the second synthesizer.

47. (New) A transmitter as claimed in claim 44, further comprising a first synthesizer and a second synthesizer, and wherein the second local oscillator signal is produced by a combined output of the first synthesizer and the second synthesizer.

48. (New) A transmitter as claimed in claim 40, comprising:

a first mixer for mixing a modulated signal with a first local oscillator signal;

a second mixer for mixing the output from the first mixer with a second local oscillator signal;

a filter associated with the output of the second mixer for selecting signals lying in a predetermined first frequency band;

a switch for selecting between transmission in the first mode and the second mode and having the filtered output of the second mixer as an input;

a first antenna for transmitting signals in the first mode when transmission in the first mode is selected;



a third mixer for mixing the output of the switch with a third local oscillator signal when transmission in the second mode is selected;

a filter associated with the output of the third mixer for selecting signals lying in a predetermined second frequency band; and

a second antenna for transmitting signals in the second mode.

49. (New) A transmitter as claimed in claim 48, further comprising a first synthesizer, and wherein the first local oscillator signal is produced by the first synthesizer.

50. (New) A transmitter as claimed in claim 48, further comprising a second synthesizer, and wherein the third local oscillator signal is produced by the second synthesizer.

51. (New) A receiver or transmitter as claimed in claim 26, operable with a terrestrial cellular communication system in the first mode.

52. (New) A receiver or transmitter as claimed in claim 26, operable with a satellite communication system in the second mode.

53. (New) A receiver or transmitter as claimed in claim 51, wherein the terrestrial cellular communication system is GSM.

54. (New) A receiver or transmitter as claimed in claim 52, wherein the satellite system is IRIDIUM.

55. (New) A receiver or transmitter as claimed in claim 52, wherein the satellite system is ICO.

56. (New) A receiver or transmitter as claimed in claim 26, wherein the first channel spacing is 200 KHz.

57. (New) A receiver or transmitter as claimed in claim 26, wherein the second channel spacing is 41.67 KHz or 25 KHz.

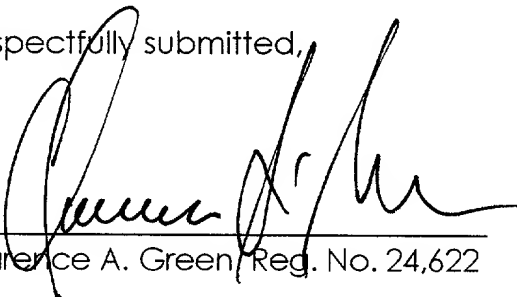
58. (New) A transceiver comprising the receiver of claim 26, and a transmitter.

59. (New) A transceiver as claimed in claim 58, further comprising a synthesizer operable for both transmitting and receiving.

#### REMARKS

This Preliminary Amendment cancels claims that were elected for prosecution in the parent application. A favorable consideration that results in the allowance of the pending claims is earnestly solicited.

Respectfully submitted,

  
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10 July 01  
Date

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